



University for the Common Good

## Exploring a 'middle ground': engagement with students in a social learning environment

Smith, Anne; Campbell-Perry, Sonya

*Published in:*  
Electronic Journal of eLearning

*Publication date:*  
2012

*Document Version*  
Peer reviewed version

[Link to publication in ResearchOnline](#)

*Citation for published version (Harvard):*  
Smith, A & Campbell-Perry, S 2012, 'Exploring a 'middle ground': engagement with students in a social learning environment', *Electronic Journal of eLearning*, vol. 10, no. 3, pp. 273-282 . <<http://ejel.org/volume10/issue3>>

### General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

### Take down policy

If you believe that this document breaches copyright please view our takedown policy at <https://edshare.gcu.ac.uk/id/eprint/5179> for details of how to contact us.

# Exploring a 'middle ground': engagement with students in a social learning environment.

Anne MJ Smith and Sonya Campbell

Glasgow Caledonian University, UK

[anne.smith@gcu.ac.uk](mailto:anne.smith@gcu.ac.uk)

[sonya.campbell@gcu.ac.uk](mailto:sonya.campbell@gcu.ac.uk)

**Abstract:** The twenty first century student demands more from universities in terms of engagement that is flexible, accessible and immediate. This means universities revisiting their engagement agenda at a time when financial constraints can least afford expensive technologies and resource dependent engagement solutions. Solutions are likely to be varied however they must fundamentally deliver what students expect in terms of engagement. Engagement requires a partnership between academe and student body, but often this relationship is a tension between what universities want to deliver, and what students expect to receive. This complex environment of constraint, tension and expectation means that solutions will be tested by both parties on those variables. In pursuit of solutions it is presumed that there could be a 'middle ground' that would be acceptable to both parties. The aim of this paper is to present the concept of 'middle ground' engagement, where parties engage in learning using a simple, cost effective and easily accessible communication tool. 'Middle ground' is an emerging concept informed by results from a study of student communication, interaction and social learning. It enables freedom of movement for the user to communicate, engage and participate with others. The tool tested in the study is not a formal learning space such as a VLE, or a branded social space such as facebook, but rather a flexible, social learning environment allowing simultaneous access to social networking sites and formal academic space. The subsequent challenge is to shape and roll out a communication tool that is 'middle ground'.

**Keywords:** engagement, participation, formal/informal learning, social learning, collaborative learning, social interaction

## 1. Introduction

It is hard to avoid the influence that Web 2.0. and social software has within the 21<sup>st</sup> century (The Department of Education, 2010; ESRC, 2011). The above terms are referred to with regularity in all spheres of our lives, and whether we choose to engage with them or not, they are now a major feature of our world. To understand their impact, we must first understand what they actually mean. The term Web 2.0, attributed to Tim O'Reilly in 2005, defined Web 2.0 as the network platform, spanning all connecting devices; Web 2.0 applications are those that will make the most of intrinsic advantages of that platform. Social software on the other hand is seen as one of the applications working with, and from the platform. Parameswaran and Whinston (2007) define social software as "applications and services that facilitate collective action and social interaction online with rich exchange of multi-media information and evolution of aggregate knowledge."

Within Higher Education (HE) there has been a growing awareness that these technological advances are having an impact on teaching and learning (Jones, Blackley, Fitzgibbon and Chew, 2010; Selwyn, 2007). This paper will focus on understanding the student experience and their perceptions of social software in regard to its importance to their engagement with learning. Its aim is to provide evidence to support the assertion that the boundaries between learning and social usage are expanding, and that there is not, in fact, a need to make clear definitions between formal and informal usage for social software to be used in an academic setting (Margaryan and Littlejohn, 2008). This paper will review the theories and concepts that underpin understanding of Web 2.0 in social learning environments thus locating the emerging consensus. A methodology will present the methods employed in the study before discussing the findings and the emergent concept. The paper concludes with a clear trajectory for future research into this emergent area of study; a space where social learning exists.

## 2. Literature review

As a population of new learners are born and raised within this setting, the 'net generation' appears to be distinct from previous generations in their abilities, expectations and motivations (Oblinger and Oblinger, 2005; Prensky, 2001). Specifically, Prensky (2001) considers the current generation to be 'digital natives' and the previous generations to be 'digital immigrants'. Within this distinction is the difference in the way learners will engage and move within the sphere of Web 2.0, the assumption being that the natives will find it easier to adopt and use these technologies than the immigrants.

With an awareness that learners themselves are changing, there is a growing need to understand how learning and teaching should change to support their needs (Schroeder et al, 2010; Skiba and Barton, 2006; Williams and Chinn, 2009). It appears traditional models which use 'The TTT' approach (talk, text, and test) are not valued by the net generation (Oblinger and Oblinger, 2005). In contrast the 21<sup>st</sup> century learner is more likely to prefer group working rather than isolation and teaching approaches that recognise the impact of social interaction and collaboration on learning appear to more closely meet their needs (Beldarrain, 2006; Lave and Wenger, 1991). Students who are the net generation exhibit behaviours that desire constant connectivity, convenience, collaboration and information rich access (Paul, 2001; Weiler, 2004). This behaviour is embedded in the business world and according to Friedrich, Peterson, and Koster (2011) will impact on the future business environment; how we do business and how the economics of business will be supported by heightened levels of connectivity.

As we attempt to gain adoption over the emergent technologies inspired by Web.2.0 concepts, there is a desire in pedagogical circles to understand and identify relevant themes and rationales in relation to their impact on learning and teaching (Conole, de Laat, Dillon and Darby, 2007; Minocha, 2009a). Although research into the impact of social software and Web 2.0 is increasing, it is still very much in its infancy (Selwyn, 2007). There is consensus however in the evidence of tensions, functionality and applicability linked to its uses and applications within Higher Education (Cole, 2008; Margaryan and Littlejohn, 2008; Williams and Chinn, 2009). Further commonality is emerging through research into the use of social software in relation to collaborative learning opportunities without the need for face to face contact (Belderrain, 2006). In a review of the role of social software in education, Minocha (2009a) highlighted the view that although the tools provided opportunities for group learning, the need to share and collaborate brought with it additional responsibility and workload which some students found inflexible and forced. Other areas of student concern raised were usability and the distinction between privacy and public nature. In summary, Minocha (2009a) argues that as adoption rates of social networking tools increase, then reasons for adoption, the benefits gained and challenges faced by students, all require investigation. Barnes, Marrateo and Pixy Ferris (2007), cited in Williams and Chinn (2009) found that students chose to use different tools to deliver a variety of different ends, and were often multi-tasking within various roles at any given time. Within this research it was found that the ability to relate prior experiences to given situations led to positive interactions in learning environments. As students already possessed certain levels of technology skills, potentially acquired whilst using the tools for social means, as 'digital natives' they could then use these skills as a platform (Prensky, 2001).

There is consensus that students benefit in terms of technology skills from using tools in an informal setting, but there is evidence that highlights their reluctance to use informal tools in which to formally learn (Madge et al, 2009; Jones et al, 2010). Research conducted by Madge et al (2009) found that 91% stated they never used Facebook (FB) for communication with university staff, and only 10% used FB throughout the year to discuss academic work. Nonetheless the results also include statistics which show that 46% used FB informally to discuss academic work on a daily/weekly basis, and 53% were positive about FB being used in a formal but administrative way to support learning. The ways stated were social/peer led academic support, possible revision opportunities and notification of changes to lecture times. Their conclusion recognised that although FB was an important tool, caution concerning the ways it was used is required as it was apparent that students felt this was their area for social, rather than academic purposes.

In a recent study, Jones et al (2010) reviewed multiple case studies pertaining to the student experience of social software from an educational perspective. They describe the perceived differences as "Learning is a painful process where as social life is pleasure to many students." There was a perceived conflict in using social software as students felt it was important to separate life and study spaces. However, rather than insist that two distinct spaces be created for students, Jones et al created the 'Continuum of socio-learning divide'. They argued that although there were separate domains within the continuum, at any given point these might overlap to address the needs of both the institution and individual leaning preferences. It is within this area of overlap that this study looks to achieve a better understanding of learner preference and usage.

The area of overlap described by Jones et al (2010) involves interaction and communication in the form of social learning; learning that occurs as a result of peer observation and interaction involving

experiences with others that influence what is known (Reed et al, 2006). However, social learning has attracted some debate in terms of its nature and dynamic (Franz and Nunn, 2009; Hanaki, 2005; Hyysalo, 2009; Reed et al, 2006; Rodela 2011; Wenger, 2000). The debate traverses disciplines and schools of thought but common to all are ideas of interaction, observation and influence. From an anthropologic perspective, Franz and Nunn (2009) explore the idea that cumulative complex social learning is more desirable than individual learning, securing the avoidance of learning by trial and error. Both Franz and Nunn (2009) and Hanaki (2005) consider social learning in cultural and evolutionary terms and yet the emergent social media exhibits a behavioural usage capable of traversing generations with rapid adoption and diffusion (Rogers, 1983). This might suggest that what is being created is a social learning phenomenon evolving at a rapid pace beyond the normal expectations of cultural and generational understandings in social learning. In contrast Hyysalo (2009) investigates how learning is considered in relation to technological innovation. Hyysalo considers the problem of social learning treatment in the context of social change, and highlights the differences between designer and user frameworks. Hyysalo describes learning 'in the wild' which is underpinned by socio psychology theory and engages the works of Engestrom (2008) and Vygotsky (1978). The view creates discussion around how social learning might bridge gaps between designers and users. This prior work is particularly useful in this paper and will inform thinking around a "middle ground", the communication technologies and their development for universities.

The study attempts to identify and explore 'middle ground'. In summary the literature shows that although there has been some adoption in formal contexts of Web 2.0 there continues to be a high level of social networking sites being used in learning contexts. The literature shows that a level of confusion still exists in relation to the questions how do students want to connect during their engagement with university life, and what tools would they prefer to use? Universities are challenged with the need to provide contemporary learning solutions to a generation with high levels of connectivity, and high levels of choice. This study captures evidence of that need as well as a solution that might contribute towards the levels and type of connectivity desired and the social learning practices. The following section details the methodology applied in the study.

### **3. Methodology**

Mixed methods were applied in this study, specifically, an action research approach over a 4 week period which involved testing an application supplied by 'Youthwire' in conjunction with semi structured questionnaires investigating communication and interaction (Borrego, Douglas, Amelink, 2009; Bryant, 2007; Hohenthal, 2006). Mixed methods have been criticised essentially because of contradictions created in terms of philosophies and approaches relating to analytical validity (Borrego et al, 2009). In this case however, mixed methods were considered highly appropriate in order to triangulate the results (Borrego et al, 2009). The students, n=8, were organised into two groups of 4 and all were asked to complete a semi structured questionnaire on communication and interaction at university. These students were enrolled on a 4<sup>th</sup> year undergraduate BA (Hons) Management, Technology and Enterprise programme. The nature of their programme meant that they were technology users but not specialists. Except for one student all were under twenty five years of age. Students joined a 4 week block of testing using a communication tool supplied by 'Youthwire'. A second group of students n=13, were then recruited for a repeat block of testing. Unfortunately group 2 were less engaged and the results were unsatisfactory due to coincidental timing of assessment deadlines. Nonetheless, sufficient data for the purposes of the study was generated from group 1 enabling the study to progress. During the test with group 1, students met every week in labs to use the communication tool in a group project environment. The following section presents and discusses the findings from group 1.

### **4. Findings and discussion**

This section will firstly introduce the communication tool before providing an overview of the action research findings. The section proceeds with an insight to current usage by students of social networking, before capturing student voices through statements of their experiences and thoughts towards social media and formal learning; these sections are structured to capture perspectives on student led connectivity and then VLE led connectivity. Finally, the findings and discussion inform the conceptualisation of 'middle ground' and social learning practices.

#### 4.1 The communication tool

The communication tool being tested to inform the conceptualisation of middle ground was provided under licence by 'Youthwire'. The tool can be installed on PC's and appears as a visual on lab screens in the university. Visually, the tool appears on the home screen as a rectangle in the top corner of the screen with app style function buttons. The 'apps' offer an array of university services as well as access to FB and similar sites. Students can use this tool by registering on line. The research team were using this product to test a new 'app' style function for 'middle ground'. Table 1 below presents findings from the action research tests. During the 4 week period student needs were recorded through discussions with staff and observations. Discussions with students and developers at 'Youthwire' created potential solutions.

**Table 1:** Action research findings

Action Research Findings	
The student brief was to undertake a small research project that involved collecting information on a new business opportunity for a recycling company. They were instructed to collect data in a group and share their findings using the new 'app' style function provided by 'Youthwire'. They were required to do this in a lab environment meeting once a week for two hours over a four week period.	
Student Needs	Solutions
Students want intuitive tools that look like social software.	A simpler way of registering and accessing friends (i.e. the group) was requested by students.
Students use chat functions continuously whilst working in labs with each other.	Switch between Chat 'app' and Share 'app'
Students share snippets of information such as tables, videos, images, websites and so on rather than completed documents and larger swathes of work	Multi tasking options required on main screen. Refresh issues to be resolved
Students will not use a tool that does not offer immediate solutions i.e. any bugs in a system will disengage individuals.	Design required to function more intuitively
Students want control over who they work with, what they share and with whom they share.	Selection and filtering required on selection of group members that can include academics
Students while working on one assignment will switch directly into another; coursework multi tasking.	Document multitasking required
Students surfing the net identify relevant information for a variety of coursework resulting in them wanting to share with multiple individuals on separate group pieces.	Share options required for multi groups and multi shares of information to single users.

In summary, students desire a 'middle ground' communication tool that controls who they share with, extensive multi-tasking features and selection and communication filtering. While literature provides consensus that students desire high level connectivity, it is more than evident that the applications and tools are contested for purpose, as is the space in which they occupy (Madge et al, 2009; Jones et al, 2010). The following sections present and discuss the results from the semi structured questionnaires; first social networking usage by students is established, second student led connectivity and third academic VLE space and connectivity.

#### 4.2 Social networking usage

Students were asked about their social networking usage and the majority demonstrated that they accessed a site at least '*once a day*'. There were other responses that indicated their usage to be more than once a day. Students in the study clearly recognised social websites as being designed for social purposes, stating that they used them '*to keep up-to-date and in touch with friends and family*'. Students were also aware of the interaction that the platforms offered and commented that they often were able to '*interact with friends and family*' (Madge et al, 2009). However, it is also notable from Table 2 that students had specific 'likes' about social networking and were prepared to concede 'dislikes'.



**Table 2:** Social networking - student likes and dislikes

Likes	Dislikes
Easy to access Easy to use Multiple uses – upload photos, play games, create events etc User friendly Free communication tool Convenience Extended networks – keeping in touch	Security issues Confidentiality issues Usability issues - slow Difficult to manage who sees what

These initial comments capture the net generation views and the consensus that they desire convenience, connectivity, sharing and interaction (Paul, 2001; Weiler, 2004). These initial responses show that social interaction using social tools is embedded in everyday life of the sample and the trends for internet and social website usage depict continuing growth for the future (Mori, 2007).

### 4.3 Student led connectivity

Once the overall understanding of usage had been established, the views sought required a contextual change. The student sample was asked to consider social networking, interaction and communication in the university and learning context; where social ties might be new and or developed through common ground at university either through study or social commonalities. The space for networking begins to expand as students appreciate the unique mix of friendships and learning. Students were asked if they ever used their personal networking sites to facilitate any group communication about coursework. Replies included:

*'Yes, for group work and to get advice on homework from other students.'* *'Yes to discuss coursework or course content, to arrange meetings, to share ideas, to catch up on work missed in class.'*

The social confusion with formal learning space becomes evident. Students do use social networking sites for group work and communication. Interaction is important to the net generation and the cognitive processes are being mixed with communication tools resulting in what might be considered a confused and dynamic state between social and formal learning (Minocha 2009).

Given that boundaries are being stretched, expanded and crossed, and that industry demands collaborative working practices (Cole, 2009; Engestrom, 2008; Margaryan and Littlejohn 2008; Williams and Chinn, 2009), students were asked to comment on what they considered to be the 'best' ways to communicate and interact at university.

*'Something like Facebook where you can restrict certain people seeing what you are doing and you can only add the people who you wish to add. This would be great as we could all communicate about coursework without thinking what others would think of our work'*

*'Also students can discuss their group work on Facebook and I see a lot of students logged onto their Facebook account while doing their work but then some students may not be happy with this idea as they wouldn't wish to add some people whom they don't know.'*

Other solutions were more pragmatic:

*'I think the best way to contact someone is through maybe email or text message'*

In summary, students show a need for connectivity to support learning and interaction. The study group clearly see the benefits of social networking sites as providing the connectivity solution, but equally the provision through existing social media contains several compromises involving personal space. The next section considers the routes to connectivity through academically driven Virtual Learning Environments or VLE's.

#### 4.4 Academic VLE led connectivity

The idea that there is a need for 'middle ground' in student learning is supported through responses to questions about formal and academic led University spaces such as Virtual Learning Environments (VLE's). Students were asked about their usage:

*'..only when necessary, so very little'.*

Clearly a VLE formal space is perceived to offer an unfavourable space.

*'Don't like the fact that there is so much going on in it. Would rather just receive e-mails from lecturers and have an online library. Sometimes it runs quite slowly',*

The functionality of VLE's is also a negative for students.

*'The layout is something I don't like and also how I have problems accessing modules I should be attached to'.*

The VLE is designed to be academic led, but this is a different usage from the concept of student led connectivity. Students were asked about connectivity with academic staff. One student responded:

*'if the lecturer can see and contribute then they can ensure that work is on track. Also, this ensures the lecturer can see that equal contribution is being made or that students are recognised for the contribution which they do make'.*

The opportunity to 'free-ride,' the lack of activity on the part of other students has been expressed as a concern in other recent studies. (Minocha, 2009a; Minocha, 2009b). This view of being connected with an academic through VLE or otherwise was supported by others:

*'I don't mind as they could possibly direct us in the right way if we are doing something wrong' and 'it will be helpful when groups are having difficulties, a lecturer would help keep on track of contributions'.*

Students were also able to address the sharing and contribution requirements on formal group learning tasks and a student/academic connectivity was important for equality and fairness:

*'The fact that they can see who is and isn't pulling their weight..'*

Nonetheless, there were negative views about connectivity with academics:

*'Don't really like the idea of the lecturers "listening in" to our discussions' and 'May feel like my every action is being watched'.*

In summary, students are seeking opportunities to chat and share, but with selected stakeholders only. Unfortunately the existing dislike of academic VLE led approaches move student learning towards social media usage and away from an academically crafted learning space which should provide value.

#### 4.5 Conceptualising middle ground

It appears that connectivity should be a solution that allows self management on the part of the student in conjunction with value laden academic learning requirements. This is perhaps 'middle ground,' connectivity using a communication tool to support a mix of academic learning; intellectual, cognitive and social interaction with selected peers and academics. This concept is distinguished from the social space supported by social networking sites that is to 'interact with friends and family.'

*'(its) Not that important as there are benefits for the lecturer being able to see the work, and if there was something that I didn't want the lecturer to see then I would use another communication tool to discuss this'.*

*'It would be preferred as a group communication but then again having lecturers seeing our work could also be an advantage'.*

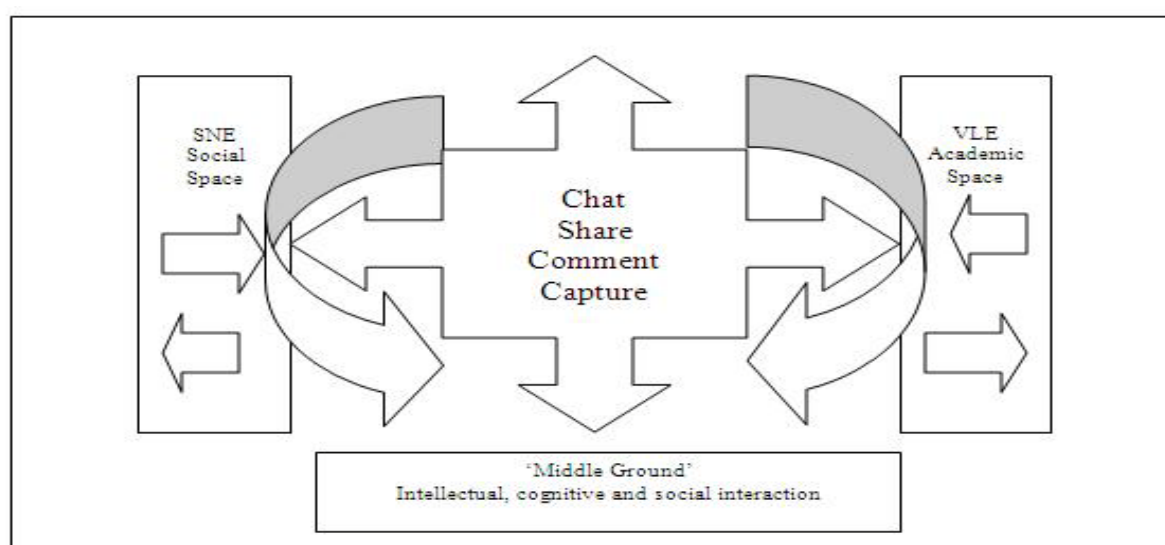
*'One member of the group can post a comment which everyone can then see and comment on, and also because it is online, group work can then be done at any time without needing to meet up outside of class time' and 'It means that we can all talk together at once without having to arrange any meetings and we can be clear about what we want each other to do because there is not limit to how long the conversation can go on for'.*

*‘.....students may not be as willing to contribute to discussions if they know that the lecturer is watching’*

*‘.....it would be about the assignment and not a personal space.’*

The requirements for student connectivity in academic contexts, creates the concept of ‘middle ground’ see Figure 1. This requirement includes communication for group working remotely, sharing images & videos, documents and links whilst chatting (Belderrain, 2006). ‘Middle ground’ is depicted in the diagram below showing a space that exists between formal learning and social networking, a space that is populated with social learning behaviours.

Essentially ‘middle ground’ has been explored through results from an action research study, and student comments retrieved from semi structured questionnaires. The overall narrative has been rich enough to reveal a particular view of communication and interaction in university and is shaping what might be solutions to the contested space between social and formal learning. The step forward using results from the action research test is to shape a tool that has the capability to provide the desired level of student connectivity in this space.



**Figure 1:** Conceptualising ‘middle ground’

## 5. Social learning in middle ground

Evidently social learning is occurring in ‘middle ground’. Students utilise the chat, share and comment activities thus supporting their peers. Furthermore, observation revealed their willingness to share the information they capture with others; specifically formal academic work. Their chat and share activity allows students to discuss how they are approaching an essay or report. This practice can promote self efficacy (Bandura, 1977) and it is an expression of Vygotsky’s (1978) zone of proximal development where individuals learn from peer activity. Learning conditions of this nature are generated by the students using their social skills. They have learned that by sharing with their friends they can make the process of learning less time consuming. They offer each other confidence by sharing, reducing risk of mistakes and avoiding the process of individual trial and error; a behaviour not exhibited in formal VLE space. Students engaged in sharing are influencing and reinforcing positive activity. Harnessing these inclinations and behaviours, and managing the user/designer frameworks, is the challenge for HEI’s (Hyysalo, 2009). How do we set the appropriate social learning conditions in HEI’s, how do we integrate processes to formal learning and how do we measure through these concepts what is actually being learned in social learning? This will impact on what should be designed in terms of communication, interaction and academic study. Our argument therefore is that ‘middle ground’ is a crucial space where students experience social learning. ‘Middle ground’ is problematic in so far as it exhibits social learning which is not a controlled space in terms of what students learn, but can be influenced by directed learning. On this basis the authors propose



that tools which bridge the gap or the overlap between personal space and formal space might be useful in the design of teaching and learning strategy (Jones et al, 2010). However limitations are evident in this study; the study did not detail, what was learned, the learning conditions or the facilitating processes. The next phase in research would be to monitor what was learned over a time period and consider diffusion rates of social learning across social groups and wider communities (Wenger, 2000).

## 6. Conclusion

The paper has focussed on a contested space between formal and informal learning. The view is that this space is not best serviced by either social networking sites or VLE's and that there are gains to be made by understanding 'middle ground'. The paper has approached the problem firstly by attempting to better understand the 21<sup>st</sup> century student, their learning and connectivity needs. Supported by literature there is consensus that student connectivity is highly important and levels are only likely to increase with demand for more convenience and more accessibility. The tensions arise when more formal academic activities seep into social spaces and personal networking sites. Students recognise this as being a problem. Rather than a contested space, evidence from the study suggests that there are benefits to be gained from harnessing social learning behaviours in this space.

In conclusion, the study has enabled the concept of 'middle ground' to be explored. As a result the specification for a tool able to meet the connectivity requirements has been developed; the requirement essentially includes communication for remote academic group working, sharing images & videos, documents and links whilst chatting (Belderrain, 2006). Future developments in this study will involve the rollout to a larger community of students, of a low cost communication tool designed to support connectivity.

Furthermore, the concept of a 'middle ground' has been explored and developed. 'Middle ground' involves social learning and is easily distinguished from the social space supported by social networking sites that is to '*interact with friends and family*'. Additionally, it is set apart from the VLE that directs and controls flow of academic knowledge and information. Finally, it is evident that social learning behaviours populate 'middle ground' suggesting that further thought may unlock new approaches to learning and teaching design; learning over a given time period, learning cultures, social learning across social groups (Wenger, 2000).

## Acknowledgements

'Youthwire' is an application owned by Youth Media (UK) and we wish to acknowledge their collaborative efforts during this study. 'Youthwire' are currently developing the application and retain ownership of all product specification.

"Campus Service Manager (**CSM**) and its associated software applications including all copyright and other intellectual property rights therein is the sole and exclusive property of Youth Media (UK) Limited and is used under licence by Glasgow Caledonian University."

Authors would like to thank Dr Keith Halcro and Dr Peter Duncan for various contributions during the study.

## References

- Bandura A. (1977) *Social Learning Theory*. Englewood Cliffs, N.J. : Prentice Hall.
- Belderrain, Y. (2006), "Distance Education Trends: Integrating New Technologies to Foster Student Interaction and Collaboration", *Distance Education*, Vol. 27, No. 2, pp. 139-153.
- Blackey, H., Jones, N., Chew, E. and Fitzgibbon, K. (2010) "Get Out of MySpace", *Computers & Education*, Vol. 54, No. 3, pp. 776-782.
- Borrego, M., Douglas, E. and Amelink, C. (2009) "Quantitative, Qualitative, and Mixed Research Methods in Engineering Education", *Journal of Engineering Education*, Vol. 98, No. 1, pp.53–66.
- Bryant, P. (2007) "Self-regulation and Decision Heuristics in Entrepreneurial Opportunity Evaluation and Exploitation", *Management Decision*, Vol. 45, No. 4, pp.732 – 748.

- Cole, M. (2008) "Using Wiki Technology to Support Student Engagement: Lessons from the Trenches", *Computers & Education*, Vol. 52, No. 1, pp. 141-146.
- Conole, G., de Laat, M., Dillon, T. and Darby, J. (2007) "'Disruptive Technologies', 'Pedagogical Innovation': What's New? Findings from an In-depth Study of Students' Use and Perception of Technology", *Computers & Education*, Vol. 50, No. 2, pp. 511-524.
- Engestrom, Y. (2008) *From Teams to Knots: Activity-Theoretical Studies of Collaboration and Learning at Work*, Cambridge University Press.
- ESRC (2011) Shaping Society, accessed 4<sup>th</sup> April 2011, (online), <http://www.esrc.ac.uk/news-and-events/news/14950/working-together-to-deliver-our-strategic-goals.aspx>.
- Franz, M. and Nunn, C.L. (2009) "Rapid Evolution of Social Learning", *Journal of Evolutionary Biology*, Vol. 22, No.9, pp. 1914-1922.
- Friedrich, R., Peterson, M. and Koster, A. (2011) "*The Rise of Generation C How to Prepare for the Connected Generation's Transformation of the Consumer and Business Landscape*", Strategy and Business, Booz & Company Inc., New York, Issue 62, Spring.
- Hanaki, N. (2005) "Individual and Social Learning", *Computational Economics*, Vol. 26, Nos. 3-4, pp.31-50.
- Hohenthal, J. (2006) "Integrating Qualitative and Quantitative Methods in Research on International Entrepreneurship", *Journal of International Entrepreneurship*, Vol. 4, No. 4, pp. 175-190.
- Hyysalo, S. (2009) "Learning for Learning Economy and Social Learning", *Research Policy*, Vol. 38, No. 5, pp. 726-735.
- Jones, N., Blackey, H., Fitzgibbon, K. and Chew, E. (2010) "Get out of MySpace", *Computers & Education*, Vol. 54, No. 3, pp. 776-782.
- Lave, J. and Wenger, E. (1991) *Situated Learning*. Cambridge: Cambridge University Press.
- Madge, C., Hooley, T., Wellens, J. and Meek, J. (2009) "Facebook, Social Integration and Informal Learning at University: 'It is More for Socialising and Talking to Friends About Work than for Actually Doing Work'", *Learning, Media and Technology*, Vol. 34, No. 2, pp. 141-155.
- Margaryan, A. and Littlejohn, A. (2008) "*Are Digital Natives a Myth or Reality?: Students' use of Technologies for Learning*" Caledonian Academy, Glasgow Caledonian University, UK. This is a final draft, shared under Creative Commons Attribution-Non-Commercial-Share Alike 3.0 Unported Licence December 11, 2008
- Mori, I. ( 2007) *Student expectations Survey 200*. Coventry: Joint Information Systems Committee. Retrieved August 15<sup>th</sup>, 2011, from <http://www.jisc.ac.uk/media/documents/publications/studentexpectations.pdf>
- Minocha, S. (2009a) "Role of Social Software Tools in Education: A Literature Review", *Education & Training*, Vol. 51, No. 56, pp. 353-369.
- Minocha, S. (2009b) "A Case Study-based Investigation of Students' Experiences with Social Software Tools", *New Review of Hypermedia and Multimedia*, Vol. 15, No. 3, pp. 245-265.
- Oblinger, D. and Oblinger, J. (2005) "Is it Age or IT: First Steps Towards Understanding the Net Generation" in Oblinger and Oblinger (Eds.), *Educating the Net Generation* (section 2.3). Boulder, CO: EDUCAUSE. Retrieved August 15, 2011, from <http://www.educause.edu/educatingthenetgen>.
- O'Reilly, T. (2005) *What is web 2.0?* Retrieved August 15 2011, from <http://oreilly.com/web2/archive/what-is-web-20.html>.
- Paul, P. (2001) "Getting Inside Gen Y", *American Demographics*, Vol. 23, No. 9, pp.42-49.
- Parameswaran, M. and Whinston, A. (2007) "Social Computing: An Overview," *Communications of the Association for Information Systems*: Vol. 19, Article 37.
- Prensky, M. (2001) "Digital Natives, Digital Immigrants", *On the Horizon*, NCB University Press, Vol. 9, No. 5, October, retrieved PDF [http://www.albertomattiacci.it/docs/did/Digital\\_Natives\\_Digital\\_Immigrants.pdf](http://www.albertomattiacci.it/docs/did/Digital_Natives_Digital_Immigrants.pdf).
- Reed, M.S., Evely, A.C., Cundill, G., Fazey, I., Glass, J., Laing, A., Newig, J., Parrish, B., Prell, C., Raymond, C., and Stringer, L.C. (2010) What is Social Learning? *Ecology and Society*, Vol. 15, No. 4, [online] URL: <http://www.ecologyandsociety.org/vol15/iss4/resp1/>.
- Rodela, R. (2011) "Social Learning and Natural Resource Management: The Emergence of Three Research Perspectives", *Ecology and Society*, Vol.16, No. 4, [online] URL: <http://www.ecologyandsociety.org/vol16/iss4/art30/>.
- Rogers, E, M, (1983) *Diffusions of Innovations*, Free Press, Macmillan publishing 3<sup>rd</sup> Edition, New York.
- Schroeder, A., Schneider, C. and Minocha, S. (2010) "The Strengths, Weaknesses, Opportunities and Threats of Using Social Software in Higher and Further Education Teaching and Learning", *Journal of Computer Assisted Learning*, Vol. 26, No. 3, pp. 159-174.
- Selwyn, N. (2008) "An Investigation of Differences in Undergraduates' Academic Use of the Internet", *Active Learning in Higher Education*, Vol. 9, No. 1, pp. 11-22.
- Skiba, D. and Barton, A. (2006) "Adapting Your Teaching to Accommodate the Net Generation of Learners", *Online Journal of Issues in Nursing*, Vol. 11, No. 2, Manuscript 4.
- Vygotsky L..S. (1978) *Mind in Society The Development of Higher Psychological Processes*, Edited by Cole M, John-Steiner, V, Scribner S and Souberman E, London, England: Harvard University Press.
- Weiler, A. (2004) "Information-seeking Behaviour in Generation Y Students: Motivation, Critical Thinking and Learning", *The Journal of Academic Librarianship*, Vol. 31, No. 1 pp. 46-53.

- Williams, J. and Chinn, S.J. (2009) "Using Web 2.0 to Support the Active Learning Experience", *Journal of Information Systems Education*, Vol. 20, No. 2, pp. 165-174.
- Wenger, E. (2000) "Communities of Practice and Social Learning Systems", *Organization*, Vol. 7, No. 2, pp.225 – 246.
- The Department of Education (2010) The Importance of Teaching, The Schools White Paper, accessed 11<sup>th</sup> March (online) <http://www.education.gov.uk/publications/eOrderingDownload/CM-7980.pdf>